IN THE CLAIMS

1. (currently amended) A waterjet cutting system comprising:

(a) a storage assembly in which abrasive particulate material is retained, said storage assembly including an inlet for allowing the abrasive particulate material to flow therein, an outlet for allowing the abrasive particulate material to flow therefrom, and an inflatable diaphragm arranged ~~adjacent~~ within said outlet such that said inflatable diaphragm is selectively inflated and deflated to ~~control~~ seal and unseal said outlet thereby controlling the flow of abrasive particulate material through said outlet, and

(b) a liquid supply source in communication with said storage assembly whereby said abrasive particulate material is mixed with a predetermined amount of liquid.

2. (original) The waterjet cutting system of claim 1, further comprising a computer numeric control (CNC) system and a pressurized air supply source operatively connected to said inflatable diaphragm for selectively inflating and deflating said inflatable diaphragm.

3. (currently amended) The ~~waterjeet~~ waterjet cutting system of claim 2, further comprises an air regulator device operatively connected to said pressurized air supply source for regulating the pressure of air supplied to inflate the inflatable diaphragm.

4. (currently amended) The waterjet cutting system of claim 1, further comprising a nozzle connected to said liquid supply source such that said abrasive particulate material and liquid is dispersed from said nozzle at a predetermined pressure.

5. (original) The waterjet cutting system of claim 1, wherein said storage assembly further comprises an upper housing, said upper housing retaining at least a portion of said

outlet, and a lower housing connected to said upper housing, said upper and lower housing having a passageway therein for permitting abrasive particulate material to flow therethrough.

6. (original) The waterjet cutting system of claim 5, wherein said storage assembly further comprises an over-inflation guard block connected to said upper housing and arranged at said outlet to prevent over expansion of said inflatable diaphragm.

7. (original) The waterjet cutting system of claim 5, further comprising a regulation device arranged between said upper and lower housing, said regulation device being operable to regulate the amount of abrasive particulate material permitted to flow through said outlet.

8. (original) The waterjet cutting system of claim 7, wherein said regulation device comprises a regulator orifice and a pivot pin, wherein said regulator orifice is rotatable about said pivot pin between predetermined limits to define full flow and no flow conditions.

9. (currently amended) An abrasive material delivery assembly for use with a waterjet cutting system, said abrasive material delivery assembly comprising: a storage assembly in which abrasive particulate material is retained, said storage assembly including an inlet for allowing the abrasive particulate material to flow therein, an outlet for allowing the abrasive particulate material to flow therefrom, and an inflatable diaphragm arranged ~~adjacent~~ within said outlet such that said inflatable diaphragm is selectively inflated and deflated ~~to control~~ seal and unseal said outlet thereby controlling the flow of abrasive particulate material through said outlet.

10. (original) The abrasive material delivery assembly of claim 9, further comprising a pressurized air supply source

operatively connected to said inflatable diaphragm for selectively inflating and deflating said inflatable diaphragm.

11. (previously presented) The abrasive material delivery assembly of claim 10, further comprising an air regulator device operatively connected to said pressurized air supply source for regulating the pressure of air supplied to inflate the inflatable diaphragm.

12. (original) The abrasive material delivery assembly of claim 9, wherein said storage assembly further comprises an upper housing, said upper housing retaining at least a portion of said outlet, and a lower housing connected to said upper housing, said upper and lower housing having a passageway therein for permitting abrasive particulate material to flow therethrough.

13. (original) The abrasive material delivery assembly of claim 12, wherein said storage assembly further comprises an over-inflation guard block connected to said upper housing and arranged at said outlet to prevent over expansion of said inflatable diaphragm.

14. (original) The abrasive material delivery assembly of claim 12, further comprising a regulation device arranged between said upper and lower housing, said regulation device being operable to regulate the amount of abrasive particulate material permitted to flow through said outlet.

15. (original) The abrasive material delivery assembly of claim 14, wherein said regulation device comprises a regulator orifice and a pivot pin, wherein said regulator orifice is rotatable about said pivot pin between predetermined limits to define full flow and no flow conditions.

16. (original) The abrasive material delivery assembly of claim 9, wherein the storage assembly further compromises a vacuum break system, said vacuum break system comprising an air feed tube with a first end and a second end, said first end

being attached to said outlet and said second end positioned within the storage assembly at a level above that of the abrasive particulate material, and a filter element in communication with the interior and exterior of the storage assembly for allowing atmospheric air to enter the storage assembly, said vacuum break system being operable to selectively reduce vacuum pressure at said outlet.

17. (currently amended) A method of controlling the flow of abrasive particulate material in a waterjet cutting system comprising the steps of:

retaining abrasive particulate material in a storage vessel;

selectively inflating a diaphragm arranged ~~adjacent~~ within an outlet of a storage vessel to ~~preclude~~ seal and unseal the outlet thereby precluding the abrasive particulate material from flowing therethrough;

selectively deflating the diaphragm to permit the abrasive particulate material to flow through the outlet;

mixing the abrasive particulate material with a liquid so that a desired ratio of abrasive particulate material to liquid is created; and

permitting the abrasive particulate material to flow with the liquid through a nozzle of the waterjet cutting apparatus, thus creating an abrasive stream to abrade a target object.

18. (original) The method of claim 17, wherein said step of selectively inflating the diaphragm is performed through the use of an air supply regulator assembly.

19. (original) The method of claim 18, further comprising using a CNC system to control the air supply regulator assembly.

20. (original) The method of claim 17, further comprising creating a vacuum environment with the storage vessel to facilitate the flow of the abrasive material through the outlet.

21. (previously presented) A waterjet cutting system comprising:

(a) a storage assembly in which abrasive particulate material is retained, said storage assembly including an inlet for allowing the abrasive particulate material to flow therein, an outlet for allowing the abrasive particulate material to flow therefrom, and an inflatable diaphragm arranged at said outlet such that said inflatable diaphragm is selectively inflated and deflated to control the flow of abrasive particulate material through said outlet,

(b) a liquid supply source in communication with said storage assembly whereby said abrasive particulate material is mixed with a predetermined amount of liquid, and

(c) a computer numeric control (CNC) system and a pressurized air supply source operatively connected to said inflatable diaphragm for selectively inflating and deflating said inflatable diaphragm.

22. (currently amended) The ~~waterject~~ waterjet cutting system of claim 21, further comprises an air regulator device operatively connected to said pressurized air supply source for regulating the pressure of air supplied to inflate the inflatable diaphragm.

23. (previously presented) The waterjet cutting system of claim 22, further comprising a nozzle connected to said liquid supply source such that said abrasive particulate material and liquid may be dispersed from said nozzle at a predetermined pressure.

24. (previously presented) The waterjet cutting system of claim 21, wherein said storage assembly further comprises an upper housing, said upper housing retaining at least a portion of said outlet, and a lower housing connected to said upper housing, said upper and lower housing having a passageway

therein for permitting abrasive particulate material to flow therethrough.

25. (previously presented) The waterjet cutting system of claim 24, wherein said storage assembly further comprises an over-inflation guard block connected to said upper housing and arranged at said outlet to prevent over expansion of said inflatable diaphragm.

26. (previously presented) The waterjet cutting system of claim 24, further comprising a regulation device arranged between said upper and lower housing, said regulation device being operable to regulate the amount of abrasive particulate material permitted to flow through said outlet.

27. (previously presented) The waterjet cutting system of claim 26, wherein said regulation device comprises a regulator orifice and a pivot pin, wherein said regulator orifice is rotatable about said pivot pin between predetermined limits to define full flow and no flow conditions.

28. (previously presented) An abrasive material delivery assembly for use with a waterjet cutting system, said abrasive material delivery assembly comprising: a storage assembly in which abrasive particulate material is retained, said storage assembly including an inlet for allowing the abrasive particulate material to flow therein, an outlet for allowing the abrasive particulate material to flow therefrom, and an inflatable diaphragm arranged at said outlet such that said inflatable diaphragm is selectively inflated and deflated to control the flow of abrasive particulate material through said outlet; and a pressurized air supply source operatively connected to said inflatable diaphragm for selectively inflating and deflating said inflatable diaphragm.

29. (previously presented) The abrasive material delivery assembly of claim 28, further comprising an air regulator device operatively connected to said pressurized air supply source for

regulating the pressure of air supplied to inflate the inflatable diaphragm.

30. (previously presented) The abrasive material delivery assembly of claim 28, wherein said storage assembly further comprises an upper housing, said upper housing retaining at least a portion of said outlet, and a lower housing connected to said upper housing, said upper and lower housing having a passageway therein for permitting abrasive particulate material to flow therethrough.

31. (previously presented) The abrasive material delivery assembly of claim 30, wherein said storage assembly further comprises an over-inflation guard block connected to said upper housing and arranged at said outlet to prevent over expansion of said inflatable diaphragm.

32. (previously presented) The abrasive material delivery assembly of claim 30, further comprising a regulation device arranged between said upper and lower housing, said regulation device being operable to regulate the amount of abrasive particulate material permitted to flow through said outlet.

33. (previously presented) The abrasive material delivery assembly of claim 32, wherein said regulation device comprises a regulator orifice and a pivot pin, wherein said regulator orifice is rotatable about said pivot pin between predetermined limits to define full flow and no flow conditions.

34. (previously presented) The abrasive material delivery assembly of claim 28, wherein the storage assembly further compromises a vacuum break system, said vacuum break system comprising an air feed tube with a first end and a second end, said first end being attached to said outlet and said second end positioned within the storage assembly at a level above that of the abrasive particulate material, and a filter element in communication with the interior and exterior of the storage assembly for allowing atmospheric air to enter the storage

assembly, said vacuum break system being operable to selectively reduce vacuum pressure at said outlet.

35. (previously presented) A method of controlling the flow of abrasive particulate material in a waterjet cutting system comprising the steps of:

retaining abrasive particulate material in a storage vessel;

selectively inflating, through the use of an air supply regulator assembly, a diaphragm arranged at an outlet of a storage vessel to preclude the abrasive particulate material from flowing therethrough;

selectively deflating the diaphragm to permit the abrasive particulate material to flow through the outlet;

mixing the abrasive particulate material with a liquid so that a desired ratio of abrasive particulate material to liquid is created; and

permitting the abrasive particulate material to flow with the liquid through a nozzle of the waterjet cutting apparatus, thus creating an abrasive stream to abrade a target object.

36. (previously presented) The method of claim 35, wherein said step of selectively inflating the diaphragm is performed through the use of an air supply regulator assembly.

37. (previously presented) The method of claim 35, further comprising using a CNC system to control the air supply regulator assembly.

38. (previously presented) The method of claim 35, further comprising creating a vacuum environment with the storage vessel to facilitate the flow of the abrasive material through the outlet.